

WHAT IS CLAIMED IS:

1. An optical wiring circuit, comprising:

a board;

5 at least one planer optical waveguide disposed on a principal surface of the board;

at least one first optical wave guide having a first end optically connected to the planer optical waveguide; and

10 at least one second optical wave guide having a second end optically connected to the planer optical waveguide;

wherein the first optical wave guide has a first other end connected to the first end;

the second optical wave guide has a second other end connected to the second end; and

15 the first other end and the second other end face a neighboring portion of one surface of side surfaces of the board.

2. The optical wiring circuit according to claim 1,
20 wherein a light diffusing member for diffusing a light beam is disposed between the planer optical waveguide and one of the first end and/or the second end.

3. The optical wiring circuit according to claim 1,
25 wherein a principal surface of the planer optical waveguide is disposed in parallel to the principal surface of the board.

4. The optical wiring circuit according to claim 1,

wherein each of the first and second optical wave guide comprises an optical fiber.

5. The optical wiring circuit according to claim 4,
5 wherein the board includes grooves on the principal surface and the first and second optical wave guide are disposed in the grooves.

6. The optical wiring circuit according to claim 1,
10 wherein the planer optical waveguide includes steps connected to the first and the second ends.

7. An optical wiring circuit layered body comprising a plurality of optical wiring circuits, each having:

15 an planer optical waveguide formed in a sheet-like shape;
a first optical wave guide having a first end optically connected to the planer optical waveguide; and

a second optical wave guide having a second end optically connected to the planer optical waveguide

20 wherein the first optical wave guide has a first other end connected to the first end;

the second optical wave guide has a second other end connected to the second end;

25 the first other end and the second other end face to a surface; and

the optical wiring circuits are superimposed on one another in a sheet side surface direction.

8. The optical wiring circuit layered body according to claim 7, wherein one of the first other end of the first optical wave guide or the second other end of the second optical wave guide connected to one planer optical waveguide is at least fixed to one of the first other end of the first optical wave guide or the second other end of the second optical wave guide connected to other planer optical waveguide.

9. An opto-electric wiring apparatus comprising:
an optical wiring circuit having:

at least one planer optical waveguide;

at least one first optical wave guide having a first end optically connected to the planer optical waveguide;
and

at least one second optical wave guide having a second end optically connected to the planer optical waveguide;

an electric circuit board; and

an opto-electric conversion element disposed on the electric circuit board,

wherein the first optical wave guide has a first other end connected to the first end;

the second optical wave guide has a second other end connected to the second end;

the first and second other ends face a surface; and

the opto-electric conversion element has an electric

wiring circuit optically connected to one of the first other end of the first optical wave guide and the second other end of the second optical wave guide.

5 10. The opto-electric wiring apparatus according to claim 9, wherein the optical wiring circuit has a board on which the planer optical waveguide is disposed;

the planer optical waveguide is formed in a sheet-like shape; and

10 a principle surface of the planer optical waveguide is disposed in parallel to a principle surface of the board.

11. An opto-electric wiring apparatus comprising:

15 an optical wiring circuits layered body including a plurality of optical wiring circuits, each having:

an planer optical waveguide formed in a sheet-like manner;

20 a first optical wave guide having a first end optically connected to the planer optical waveguide; and

a second optical wave guide having a second end optically connected to the planer optical waveguide, an electric circuit board; and

25 an opto-electric conversion element disposed on the electric circuit board,

wherein the first optical wave guide has a first other end connected to the first end;

the second optical wave guide has a second other end connected to the second end;

the first and second other ends face a surface;

the opto-electric conversion circuit has a plurality
5 of electric wiring circuits at one of the first other end of the first optical wave guide and the second other end of the second optical wave guide; and

the plurality of electric wiring circuits are disposed in a vertical direction to a layered direction of the optical
10 wiring circuits layered body.